Remarks

Claims 1-4 and 6-15 are currently pending in the application. Claims 8 and 9 are withdrawn, being directed to a non-elected invention. Claim 5 remains cancelled. In the Office Action mailed February 1, 2010, claims 1-4, 6, 7 and 10-15 are rejected. In the instant Amendment, claim 1 has been amended.

Claim 1 has been amended to recite that the steel is resistant to delayed fracture. Support for the amendment is found in the specification at p. 3, ll. 28-32. Claim 1 is also amended to remove Ti and Nb from the composition. Support for the amendment is found in the specification at p. 10, ll. 21-23 and at Table 1. Claim 1 has been further amended to recite Si having a lower limit of 0.107%. Support for this amendment is found in the specification at p. 18, Table 2, e.g., Steel Code no. 54, which satisfies TS > 980 MPa and TS×EL > 16,000.

Claims 8 and 9 remain withdrawn. Dependent claim 8 depends and incorporates by reference all the limitations of independent claim 1. Dependent claim 9 depends from dependent claim 8. If independent claim 1 is found allowable, it is respectfully requested that dependent claims 8 and 9 be rejoined to the application and found allowable.

No new matter has been introduced by the amendments. Entry of the foregoing amendments and consideration of the following remarks are respectfully requested.

Claim Rejections under 35 U.S.C. § 103(a)

Claims 1-4, 6, 7 and 10-15 are rejected under 35 U.S.C. § 103, as being unpatentable over the computer-generated English translation of Japanese patent 2003-105513 ("JP'513").

The present claims are drawn to a high strength steel sheet excellent in formability, compatible with a chemical converted coating treatment, hot-dip galvanizing and resistant to delayed fracture, the steel being composed of the claimed composition, including: 0.107 to 0.3% Si, and 0.2 to 1.2% Al, where the tensile strength of the inventive high strength, austenite free steel sheet is greater than 980 MPa and having TS×EL greater than 16,000.

The Examiner has maintained the rejection citing JP'513 for disclosing a steel sheet having a composition with constituents whose wt% ranges allegedly overlap those recited by the claims. The Examiner contends that such overlap establishes a *prima facie* case of

obviousness because it would allegedly be obvious for one skilled in the art to select the claimed alloy wt% ranges over the broader disclosure of the prior art since the prior art teaches the same utility (hot dip galvanizing) and similar properties, such as high strength and elongation. See, Office Action dated March 26, 2009. The Examiner further points to JP'513 for disclosing a steel having a microstructure comprising 70 to 97 vol.% ferrite and 3 to 30 vol.% of austenite and/or martensite which would allegedly suggest the present invention microstructure comprising ferrite and martensite without containing retained austenite.

In contrast to the Examiner's contentions, the JP'513 steel composition does not overlap with the presently claimed composition. JP'513 requires a reduced amount of Si: from 0.001-0.1%, in order to secure productivity, strength and reduced scale damages (see, JP'513 at ¶ [0026]). However, the present invention is operable at higher Si values without incurring poor plating properties of the JP'513 technology. See, specification at p. 7, ll. 24-36 and Tables 1 and 2.

Also, JP'513 does not disclose a single non-austenite steel sheet having the claimed amounts of Si or Al. The only non-austenite JP'513 steels G and H require *i*) Si in an amount well below the presently claimed range 0.107-0.3%, *ii*) Al in an amount greater than the presently claimed range of 0.2-1.2% and *iii*) include additional elements for improving strength and alloying that are not included in the present invention. Specifically, steels G and H each have Si: 0.007% and Al: 1.34 and 1.8%, respectively. Furthermore, the only exemplified JP'513 steels having Al as claimed provides an austenite DP steel sheet. See, JP'513 at Tables 1 and 3, steels A, C, D, F and J.

Finally, the properties of the JP'513 are different than the properties of the present invention. For example, JP'513 does not disclose or suggest a steel having a tensile strength greater than 980 MPa. Instead, JP'513 steels have TS less than 815 MPa when TS×EL is greater than 16,000. See, JP'513 at Table 3. Moreover, JP'513 does not even consider the problems of delayed fracture in high TS steel. As discussed in the instant specification, although the Si surface problem may be remedied by reducing the Si content, the problem remains that, if the tensile strength is greater than 980 MPa or more, the shape freezing property degrades and delayed fracture is known to occur. See, the specification at p. 2, ll. 14-21.

Thus, based on the JP'513 disclosure, a person of ordinary skill in the art would not be motivated to increase the amount of Si in the composition to at least 0.107% in order to arrive at the presently claimed invention. Such a modification would cause the JP'513 steel to be incompatible with the JP'513 hot-dip galvanized zinc coating and thus render the JP'513 technology inappropriate for its intended purpose. Moreover, a person of ordinary skill in the art would not expect to achieve a tensile strength greater than 980 MPa when TS×EL is greater than 16,000 since all the JP'513 steels are 815 MPa or less. And finally, a person of ordinary skill in the art would not expect to achieve a non-austenitic, high tensile strength steel having A1 less than 1.2%, as claimed, since all the JP'513 steels having such an A1 composition provide a secondary phase of retained austenite.

Therefore, JP'513 does not render the claimed invention obvious, for at least the above reasons. Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C.§ 103 of claims 1-4, 6, 7 and 10-15 in view of the JP'513 disclosure. Further, applicants respectfully request that claims 8 and 9 be rejoined to the application and found allowable.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the present application is in condition for allowance. Early and favorable action by the Examiner is earnestly solicited. If the Examiner believes that issues may be resolved by a telephone interview, the Examiner is invited to telephone the undersigned at the number below.

Respectfully Submitted,

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